

## CLAIMS

1. An artificial bone material, comprising a porous ceramic consisting of  $\beta$ -tricalcium phosphate and a marrow cell incorporated in the porous ceramic.
- 5 2. The artificial bone material according to claim 1, further comprising a cell growth factor that contributes to osteogenesis, combined with the marrow cell.
- 10 3. The artificial bone material according to claim 1, wherein the porous ceramic has a porosity of 60% to 90% and includes macropores of size 50  $\mu\text{m}$  to 1,000  $\mu\text{m}$  that communicate to each other and micropores of size 2  $\mu\text{m}$  or less that communicate to each other.
- 15 4. The artificial bone material according to claim 1 or 3, wherein the porous ceramic is produced by molding a  $\beta$ -tricalcium phosphate powder synthesized by a mechanochemical method as a raw material, and then sintering the resultant.
- 20 5. The artificial bone material according to claim 1 or 2, wherein the marrow cell is a cultured cell collected from a patient and incubated.
6. The artificial bone material according to claim 5, wherein the marrow cell is subjected to at least one selected from the group

consisting of electric stimulation and mechanical stimulation during incubation.

7. The artificial bone material according to claim 5 or 6, wherein
- 5 the marrow cell is inoculated in the porous ceramic by means of at least one of or a combination of (a) to (c):
- (a) inoculating the cultured cell under reduced pressure or increased pressure;
- (b) inoculating the cultured cell with reducing and increasing the
- 10 pressure alternatingly; and,
- (c) inoculating the cultured cell with exerting a centrifugal force.